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The Association between Management Earnings Forecast Errors and Accruals: Case of Iran

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Abstract
The purpose of this paper a survey on the relationship between errors in management forecasts of subsequent year earnings and current year accruals at the level of active companies and industries in Tehran stock market. In an uncertain operating environment, managers' assessments of their firms' future perspective is usually imperfect. This problem has a decreasing effect on both accruals generation and earnings projection. We hypothesize that management earnings forecasts exhibit greater optimism (pessimism) when accruals are relatively high (low). This paper is based on 124 companies working for 17 industries from 2003 to 2009 using multiple regression analysis of panel data. The results show that there is a positive significant correlation between errors in management forecasts and the accruals, both at the level of companies and active industries in the Tehran stock market. This significant positive correlation is stronger for firms operating in a more uncertain business environment and for firms in industries exhibiting greater covariation between accruals and growth-related activities.
Keywords: management earnings forecasts, accruals, earnings forecasts error.

INTRODUCTION

Mandatory and voluntary disclosures represent two important channels through which managers communicate information to outside shareholders. Kothari (2001), Healy and Palepu (2001) showed that both types of disclosure contain value-relevant information and significantly influence security prices. The information given by mandatory disclosure usually remains largely unexplored and so the exploration of this kind of information increases our knowledge and understanding of the information that comes from voluntary disclosure. Also, the information from voluntary disclosure increases the ability of investors for investment. Accruals represent a key aspect of mandatory reporting. Sloan (1996) and Bradshaw (2001) found that investors and financial analysts fail to fully understand the implications of accruals for future earnings. In an uncertain operating environment, managers' knowledge about their firms' business prospects is imperfect, which can lead to unintentional errors in managers' assessments of future firm performance. When managers have flexibility to convey their imperfect business assessments through accruals and earnings forecasts, these two information disclosures likely contain common errors.

Ben-David et al. (2007) further document that CFO overconfidence (measured as miscalibrated beliefs based on a survey) induces distortions in a series of corporate decisions, including investment, external financing, and payout decisions. We expect to observe a strong positive association among firms operating in a more uncertain business environment in which managers are likely to make more substantial judgmental errors and also rely more heavily on their estimations and projections to generate accruals. This positive relation is stronger for firms having higher cash flow volatility, higher sales growth volatility, or longer operating cycles.

We expect to find a stronger positive association for firms exhibiting higher covariation between accruals and growth-related activities that capture managers' assessments of business prospects (e.g., employee growth, as proposed by Zhang 2007). In contrast, for industries in which accruals show little covariation with employee growth, the relation between management forecast errors and accruals is insignificant. An alternative explanation for our observed positive association between management earnings forecast errors and accruals is that managers intentionally manipulate accruals upward (downward) and then intentionally make optimistic (pessimistic) earnings forecasts for the purpose of reaping private benefits. This manipulation is for the sake of gathering private benefits of the managers.

RELATED LITERATURE

Earnings forecasts, always has been one of the basic problems in field of accounting. Previous studies show that managers do earnings forecasts with different motives. In this section the most relevant researches in and out of Iran is discussed.

Cox (1985) shows that volatile earnings reduce the frequency of management earnings forecasts.

McNicols (1989) finds that management earnings forecasts contain predictable errors in relation to historical stock returns, suggesting that managers fail to efficiently incorporate information contained in past stock prices into their earnings forecasts. Lang and Lundholm (1993) find a negative association between the earnings-return correlation and disclosure quality. Prior studies have proposed various incentive-related factors that could motivate managers to bias their earnings forecasts to inflate market earnings expectations (Koch 1999); facilitate security issuance (Frankel et al. 1995); improve trading profitability (Noe 1999).

Bradshaw et al. (2001) document that analysts make earnings forecasts that are more optimistic (pessimistic) following periods of high (low) accruals. Einhorn (2005) demonstrates that various features of mandatory reporting (such as the level of discretion in mandatory reporting and the information quality of mandatory disclosure) affect managers' propensity to provide voluntary disclosure. Lennox and Park (2006) find that the historical earnings response coefficient is positively associated with management's issuance of earnings forecasts. Gong et.al. (2008) showed that there is a positive significant correlation between errors in management forecasts of subsequent year earnings and current year accruals; this relationship in the environment with higher uncertainity is stronger. He also concludes that for firms in industries exhibiting greater covariation between accruals and growth-related activities, this relationship is stronger too.

Francis et al. (2008) find that firms that exhibit good earnings quality provide a larger quantity of voluntary disclosures in annual reports than do firms exhibiting poor earnings quality.

Previous relevant research in Iran

Mashayekh and Shahrokhi (1386 – 2007) in a study titled "a review of precision of management earnings forecasts and the influential factors on them" showed that there is a significant relationship between management forecasts error and forecasts error based on accidental step. This study shows that the management forecasts deviates optimistically, and the precision of forecasts differs depending upon the size of the firm its being profitable or unprofitable, and the kind of technology.

Dastgir, Sajjadi and Sabet (1386 – 2007) in a study titled "influencing factors on partiality of managers in earnings forecast" found that there is a significant association between the size of the firm and financial crisis with management earnings forecast. In this study a significant association wasn't seen between the growth rate of the firm and the price control through the partiality in the earnings forecast. The Sarbanha and Ashtab (1387 – 2008) in a study titled "recognition of the influential factors in earnings forecast error of newly entered firms in Tehran stock market" found that there is an inverse relationship between the Profitability Ratio and the earnings forecast error. they showed that there is a significant relationship between the size of the firm, life of it, the Time Horizon of earnings forecast, Leverage Ratio, the auditor 's reputation and the earnings forecast error. Kordestani & Bagheri (1388 – 2009) in a study titled "relationship between economic value added and earnings forecast error" found that there is significant positive relationship between economic value added and earnings forecast error based on compound data.

At the same time the operational income and the operating cash flows do not have a significant relationship with earnings forecast error. Based on sectional data there is significant relationship between economic value added and earnings forecast error, but there is not a significant relationship between economic value added and operating cash flow with earnings forecast error. Also informational content of economic value added is more than other variables. Hoshi et.al. (1388 – 2009) in a study under the title of "the effect of section 340 from auditing standards on the quality of earnings forecast" showed that the application of this section from audition standards does not decrease the earnings forecast error and change in the price of stock – share . Kordestani, Ashtab (1389 – 2010) in a study entitled "relationship between earnings forecast error and unusual return of the shares of newly entered firms in Tehran stock market" showed that there is a significant positive relationship between earnings forecast error and unusual return of the shares of newly entered firms in Tehran stock market. Hashemi et.al. In their study titled "assessment of the capability of accrual and cash components of income in forecasting extraordinary income and determination of the value of admitted firms in Tehran stock market" found that the capability of cash flows and the sum of accruals in determination of the value of the firm and earnings forecast is unusual. This study also shows that the accrual components have the capability to forecast the non–operational income.

Rezazadeh & Ashtab (1389 – 2010) in a study titled "the relationship between precision of earnings forecast and return of the stock–share from newly entered firms in Tehran stock market " show that in newly entered firms in Tehran stock market the prices are lower and there is a significant relationship between earnings forecast and the primary return of newly entered firms in Tehran stock market. So the investors can distinguish the earnings forecast error and use it for valuation. Khalipheh Sultan et.al. (1389 – 2010) in a study titled " the relationship between errors in management forecasts of subsequent year earnings and current year accruals on the level of firms listed in Tehran stock market" from (1384-2004 to 1387-2007) in 86 firms showed that there is a significant positive relationship between errors in management forecasts of subsequent year earnings and current year accruals on the level of firms listed in Tehran stock market. Further more such a relationship in firms that operating in a more uncertain business environment has a higher significance.

Research hypothesis

H1: There is a significant positive association between management earnings forecast errors and accruals in the firms listed in Tehran stock market.

H2: The positive association between management earnings forecast errors and accruals is stronger for firms that exhibit high covariation between accruals and growth-related activities

H3: There is a significant positive association between management earnings forecast errors and accruals in active industries in Tehran stock market.

H4: The positive association between management earnings forecast errors and accruals is stronger for industries operating in a more uncertain business environment.

Research method and the test of hypotheses

The purpose of this study is the examination of relationship between errors in management forecasts of subsequent year earnings and current year accruals in firms and active industries in Tehran stock market. So, the applicable purpose and the method of data gathering is descriptive of the correlation kind. In this study the cumulative multivariate regression was used to examine the relationship between two variables. The level of confidence in this study is 95%.

Collection of data, testing model of hypotheses and definition of variables

Necessary data for examination of the relationship between errors in management forecasts of subsequent year earnings and current year accruals through information data banks Tadbirpardaz, Rahavard Novin, and official site of the Tehran stock market has been collected. The necessary data has been prepared in the excel 2007 software for analysis. The final analysis has been done with SPSS software, version 16. The model used for hypothesis testing is based on Gong's model (2008):

$$\mathrm{MFE}_{t+1} = \alpha + \beta_1 \mathrm{WCACC}_t + \beta_2 \mathrm{AltmanZ}_t + \beta_3 \mathrm{BM}_t + \beta_4 \mathrm{Ln}(\mathrm{MV}_t) + \beta_5 \mathrm{Return}_t + \beta_6 \mathrm{ROA}_t + \beta_7 \mathrm{CFOVOL}_t + \beta_8 \mathrm{OPCYCLETS}_t + \beta_9 \mathrm{SALESGRVOL}_t$$

Table 1 show the definitions and table 2 shows the calculation of operational variables in the study.

Table 1 – definition of operational variables

Name of the variable	Definition of the variable	Type	Name of the variable	Definition of the variable	Type
MFEit	Errors in forecasts of subsequent year earnings	Dependent	AltmanZit	Altman index of bankruptcy estimation	Control
WCACCit	Accruals for working capital	Independent	Returnit	Yearly return of the stock	Control
CFOVOLit	Fluctuation of cash flow	Control	OPCYCLETSit	Fluctuation of operational cycle	Control
ROAit	Return on assets	Control	SALESGRVOLit	Fluctuation of sale improvement	Control
Ln(MV) it	Ln of the market value of stock-holders equity	control	BMit	Book to market	Control

Table 2 – definition of operational variables

Name of the variables	Method of calculation of variables
MFEt+1	The difference between the first earnings forecast of subsequent year and the actual earnings of the subsequent year divided by the first earnings forecast of subsequent year
WCACCt	)total assets of the previous year(t-1]/)current liabilities -cash -current assets -(t)current liabilities -cash -current assets([
AltmanZt	]t) total liabilities /market value of stock-holders equity([-]t) total assets)/sales +operating income +3.3× retained earnings -1.4×working capital(1.2×[
BMt	)total number of shares×the price of one share at the end of the year t / (t)book value of the stock-holders equity(
Ln(MV)t	Ln)total number of shares at the end of the year t × the price of one share at the end of the year t(
Returnt	Return of the shares at the end of the year t
ROAt	Return on assets at the end of the year t
CFOVOLt	Standard deviation of cash flow over the sum of total assets during 5 years with the calculation of the year t
OPCYCLETSt	t)cost of good solds /average inventories× 365 + (t)sales / average receivables×365(
SALESGRVOLt	Standard deviation of sales improvement during 5 years with the calculation of the year t

Population and statistical sample

Owing to limitation in access to necessary data, the time span for this study from 1382 to 1389 (2003 to 2009) and statistical population under study, were the firms listed in Tehran stock market.

In choosing the sample the following points were in mind:

The end of fiscal year of these firms was 29th of esphand (21st of March).

The firms under study had forecasted the earnings per share regularly during the study.

These firms were profitable during the study.

The firms under study were not part of financial and investment intermediary industries (Because of the nature of this kind of industry).

During the study all the firms under study were active.

These firms were listed in Tehran stock market before 1382(2003) and were listed until 1388(2009).

After considering the list of the firms listed in Tehran stock market, 124 of them had the above specifications.

In this study the hypotheses were tested in the firm and then the active industries in Tehran stock market. Since the number of the existing firms in the specified time span were few in some of the industries, so the similar firms were considered as a group. Table 3 shows the grouping of the industries. In this study wearing industries and industrial contracts were omitted for the following reason:

(1) Shortage of the sample,

(2) The kind of activity which couldn't be put in other similar industries.

Table 3 shows the number of the sample in each industry.

Table 3 – sample number in industry

No.	The size of sample	Number of industries	Industry	Industry subgroups
1	30	2	Drugs and chemicals	Pharmacological products and material
2	28	5	Minerals	Cements, tiles, metal minerals, non-metal minerals, other minerals
3	29	3	Cars and machinery	Cars and car parts, machinery and equipments, tires
4	17	2	Metals	Metal products, basic metals
5	9	2	Food and agriculture	Food products, agricultural products
6	7	3	Electrical equipments, telecommunication and computers	Electrical equipments, telecommunication and computers
Total number of samples in industry: 120 firms, the number of subgroup industries: 17 industries.				

Descriptive statistics

Table 4 gives information about central parameters and distribution parameters of the variables.

Table 4 – descriptive statistic of the variables used in the study

Variables	Mean	Standard deviation	Maximum	Minimum	Median	First quarter	Third quarter
MFEt+1	0/0447	0/4354	1/56	-1/79	0/0785	-0/0741	0/2463
WCACCt	0/0122	0/12179	1/14	-0/26	0/0120	0/0276	0/0403
AltmanZt	1/3718	0/56779	3/93	0/09	1/3315	1/0168	1/2315
BMt	0/05877	0/35520	2/01	0/01	0/5623	0/306	0/7549
Ln(MV)t	26/5727	1/40812	30/58	23/33	26/4097	25/5807	27/5561
Returnt	0/3193	0/31918	2/14	-0/09	0/2410	0/1430	0/4013
ROAt	0/13688	0/899	0/45	-0/02	12/31	0/0609	0/1941
CFOVOLt	0/804	0/17041	1/84	0/01	0/0542	0/0368	0/0740
OPCYCLETSt	255/54	118/98	752/183	66/87	255/543	178/0695	315/4605
SALESGRVOLt	0/8784	0/19597	1/14	0/04	0/3594	0/0855	0/2001

Analysis of the data

One of the basic assumptions of regression is the normal residue of the pattern. So here we have tested this assumption through kolmogorov–smirnov test in the firms and active industries in Tehran stock market. Table 5 shows the results of the above test. The results show that the residues in regression line have normal distribution and probably do not have invariance.

Table 5 – kolmogorov-smirnov test in the firms and industries under the study

Description	Firm level	Industry level					
	Firm	Drugs and chemicals	Mineral	Cars, machinery, tire	Metals	Food-agriculture	Electrical equipments
Number of observation	868	210	196	203	119	63	49
K-S statistic	1/039	1/215	1/118	1/073	1/104	1/064	1/200
Level of significance	0/231	0/104	0/164	0/200	0/174	0/207	0/112

Test of hypotheses & analysis of the findings

Test of the first hypothesis

The results of the first hypothesis are shown in table 6. The statistic "t" equal to 4.810 and level of significance equal to 0.000 with positive coefficient 0.485 confirms a significant positive relationship between errors in management forecasts of subsequent year earnings and current year accruals on error level of 1 %.

On the other hand the statistic Durbin-Watson (D-W) was 1.918 which shows the independence of the residues. The amount of coefficient of determination 42.2 % and the amount of adjusted coefficient of determination was reported 35.1. The amount of adjusted coefficient of determination means that about 35.1% of all the changes explain the earnings forecast error and 64.9% is under the influence of other factors. Also the statistic fisher (F) and the level of significance 5.422 and 0.000, respectively show that the model is sufficient enough.

Table 6 – test results for the first hypothesis

MFEt+1= α +β1WCACCt+β2AltmanZt+β3BMt+β4Ln(MVt)+β5Returnt+β6ROAt+β7CFOVOLt+β8OPCYCLETSt +β9SALESGRVOLt

study of the firms	Width from the beginning	WCACC	Altman-Z	BM	Ln(MV)	Return	ROA	CFOVOL	OPCYCLETS	SALESGRVOL
Coefficients	α	1β	2β	3β	4β	5β	6β	7β	8β	9β
	2/902	0/485	-0/034	0/207	0/140	0/156	0/025	-0/090	0/370	-0/026
Statistic t	-1/100	4/810	-0/175	1/691	1/174	1/309	0/185	-0/811	3/569	-1/36
Level of significance	0/276	0/000	0/861	0/096	0/245	0/195	0/854	0/421	0.001	0/893
Coefficient of determination (R2)		%42/2	Durbin-Watson statistic			1/918	Level of significance of statistic F			0/000
Adjusted Coefficient of determination (R̂2)		%35/1	Statistic F			5/422				

Test of the second hypothesis

In doing this test, improvement of sales of the firm has been used as an index for the improvement of activities of the firms. For this purpose, first the improvement of the sale of the firm during 7 years 1382–1388 (2003–2009) was calculated. Then the covariance between WCACC (accruals of the working capital) and the improvement of the sales of the firm was obtained.

In the next step based on the quantity of covariance, the firms were divided by quarters. As the last step, the firms in first and fourth quarters were chosen, in which accruals do not change (or change) according to the improvement of the firm, respectively.

Table 7 – Test of the second hypothesis

MFEt+1= α +β1WCACCt+β2AltmanZt+β3BMt+β4Ln(MVt)+β5Returnt+β6ROAt+β7CFOVOLt +β8OPCYCLETSt β9SALESGRVOLt								
	Firms with proportionate change(fourth quarter)				Firms with disproportionate change(first quarter)			
Variables	Coefficients		Statistic "t"	Level of significance	Coefficients		Statistic "t"	Level of significance
Width from the beginning	α	-3/176	-0/561	0/581	α	0/079	0/063	0/950
WCACCt	1β	1/068	6/552	0/000	1β	0/037	0/325	0/747
Altman-Zt	2β	0/079	0/562	0/581	2β	-0/255	-1/240	0/219
BMt	3β	-1/39	-1/093	0/287	3β	0/113	0/803	0/426
Ln(MV)t	4β	0/107	0/637	0/532	4β	-0/036	-0/269	0/789
Returnt	5β	-0/036	-0/358	0/724	5β	0/682	4/298	0/000
ROAt	6β	0/047	0/263	0/795	6β	0/477	3/116	0/003
CFOVOLt	7β	0/021	0/207	0/838	7β	-0/451	-2/564	0/013
OPCYCLETSt	8β	-0/115	-0/599	0/556	8β	-0/020	-0/177	0/860
SALESGRVOLt	9β	0/076	0/773	0/499	9β	-0/003	0/028	0/967
Coefficient of determination(R2)	%84				%48/9			
Adjusted coefficient of determination) R̂2(	%76/8				%39/7			
Statistic of Durbin-Watson	2/233				1/864			
Statistic F	11/695				5/323			
Level of significance of the statistic F	0/000				0/000			

The results of the test of the second hypothesis in table 6, shows that in firms that, accruals change proportionately with the improvement of the activities of the firm, the level of significance is the highest for the positive relationship between errors in management forecasts of subsequent year earnings and current year accruals. (Level of significance is 99%)

In contrast, in firms that accruals do not change proportionately with the improvement of the firm activities, such a relationship doesn't exist.

Test of the third hypothesis

With the results of the test of the first hypothesis we can say there is a significant positive relationship between errors in management forecasts of subsequent year earnings and current year accruals. But, since this test has been done in the firms listed in the Tehran stock market, maybe the result could not be regarded precise, dependable, and generalized. So for more assurance and generalization this test was done in active industries in Tehran stock market too. The results in each industry are shown in the following tables.

Table 8 – drug industry, chemicals

variables	Width from the beginning	WCACC	Altman-Z	BM	Ln(MV)	Return	ROA	CFOVOL	OPCYCLETS	SALESGRVOL
Coefficients	α	1β	2β	3β	4β	5β	6β	7β	8β	9β
	-5/784	0/299	0/234	0/33	0/624	-0/045	-1/118	-0/072	0/053	0/213
Statistic "t"	-1/548	3/113	2/515	0/523	5/358	0/676	-8/294	1/042	0/479	2/464
Level of significance	0/000	0/002	0/13	0/602	0/000	0/500	0/000	0/299	0/633	0/015
Coefficient of determination)R2(	%32	Statistic Durbin-Watson			1/862	Level of significance of statistic F				0/000
Adjusted coefficient of determination)R̂2(	%28/7	Statistic F			9/916					

Table 9 – mineral industries

variables	Width from the beginning	WCACC	Altman-Z	BM	Ln(MV)	Return	ROA	CFOVOL	OPCYCLETS	SALESGRVOL
Coefficients	α	1β	2β	3β	4β	5β	6β	7β	8β	9β
	321/842	0/318	-0/007	0/118	-0/220	0/108	-0/896	-0/101	0/296	0/213
Statistic "t"	2/614	2/920	0/023	0/938	-2/204	0/870	-5/527	0/866	3/325	1/776
Level of significance	0/012	0/005	0/982	0/353	0/032	0/388	0/000	0/391	0/002	0/084
Coefficient of determination)R2(	%71/2	Statistic Durbin-Watson			1/775	Level of significance of statistic F				0/000
Adjusted coefficient of determination)R̂2(	%66	Statistic F			13/747					

Table 10 – agricultural and food products industries

variables	Width from the beginning	WCACC	Altman-Z	BM	Ln(MV)	Return	ROA	CFOVOL	OPCYCLETS	SALESGRVOL
Coefficients	α	1β	2β	3β	4β	5β	6β	7β	8β	9β
	357/945	0/188	-0/534	-0/089	-0/265	0/288	0/479	0/261	-0/276	0/068
Statistic "t"	2/606	2/354	-4/088	-0/923	-2/512	3/164	3/594	3/214	-3/139	0/722
Level of significance	0/011	0/021	0/000	0/358	0/014	0/002	0/001	0/002	0/002	0/472
Coefficient of determination)R2(	%50/2	Statistic Durbin-Watson			1/882	Level of significance of statistic F				0/000
Adjusted coefficient of determination)R̂2(	%45/4	Statistic F			10/515					

Table 11 – automobile, machinery and tire industries

variables	Width from the beginning	WCACC	Altman-Z	BM	Ln(MV)	Return	ROA	CFOVOL	OPCYCLETS	SALESGRVOL
Coefficients	α	1β	2β	3β	4β	5β	6β	7β	8β	9β
	-32/496	0/270	0/517	0/899	0/826	-0/727	0/421	-0/095	0/105	0/465
Statistic "t"	-4/194	2/340	-3/952	4/772	4/419	-1/894	3/244	-1/011	0/874	1/126
Level of significance	0/000	0/023	0/000	0/000	0/000	-0/063	0/002	0/316	0/386	0/265
Coefficient of determination)R2(	%59/3	Statistic Durbin-Watson			1/872	Level of significance of statistic F				0/000
Adjusted coefficient of determination)R̂2(	%52/9	Statistic F			9/244					

Table 12 – electrical equipments communication, computer industries

variables	Width from the beginning	WCACC	Altman-Z	BM	Ln(MV)	Return	ROA	CFOVOL	OPCYCLETS	SALESGRVOL
Coefficients	α	1β	2β	3β	4β	5β	6β	7β	8β	9β
	330/691	0/267	-0/839	-0/157	-0/292	-0/155	0/026	-0/833	0/083	0/46
Statistic "t"	1/1413	2/343	-5/527	-1/005	-0/851	-1/440	0/092	-8/286	0/473	3/71
Level of significance	0/165	0/024	0/000	0/321	0/399	0/157	0/927	0/000	0/639	0/001
Coefficient of determination)R2(	%77	Statistic Durbin-Watson			2/063	Level of significance of statistic F				0/000
Adjusted coefficient of determination)R̂2(	%76/2	Statistic F			15/88					

Table 13 – metal industries and metal products

variables	Width from the beginning	WCACC	Altman-Z	BM	Ln(MV)	Return	ROA	CFOVOL	OPCYCLETS	SALESGRVOL
Coefficients	α	1β	2β	3β	4β	5β	6β	7β	8β	9β
	7/227	0/593	0/113	-0/151	0/022	0/987	0/494	0/335	0/447	-1/205
Statistic "t"	1/282	2/441	0/455	0/620	0/108	4/002	3/586	-1/165	-1/404	-3/598
Level of significance	0/219	0/028	0/663	0/554	0/916	0/001	0/003	0/163	0/181	0/003
Coefficient of determination)R2(	%77/1	Statistic Durbin-Watson			2/136	Level of significance of statistic F				0/000
Adjusted coefficient of determination)R̂2(	%63/3	Statistic F			5/598					

The results of the test of the hypothesis 3, shows that there is a significant positive relationship between errors in management forecasts of subsequent year earnings and current year accruals in active industries in Tehran stock market . this positive relationship in mineral and drug and chemical industries is stronger (level of confidence 99%). this positive relationship in industries like electric communication equipments, computers, metals, metal products has a lower significance (level of confidence 95%). it is forecasted that this difference at the level of significance is because of the environment in which the industries under the study work in. to study this point, a test of another hypothesis was done.

Test of the fourth hypothesis

For determination of the level of inconfidence of each industry under the study, three indices were used: fluctuation of operating cash flow, fluctuation of operational cycle and fluctuation of improvement in sales.

For this purpose, first of all the relevant data of each index for the active firms in each industry was calculated and then from the means of the data of the firms the relevant data for each industry relating to each index were extracted. Then with regard to the six industries under study, they were rated from one to six for each index. Finally by adding the given points for each industry, the level of inconfidence for each industry was calculated. The above operations are shown in table 14.

Table 14 – giving points to the industries in terms of 3 indices

Indices / industries	Operating cash flow fluctuation	Operational cycle fluctuation	Improvement of sales fluctuation	Points for each industry based on the indices			Total points
				Operating cash flow fluctuation	Operational cycle fluctuation	Improvement of sales fluctuation	
Drugs-chemical	0/093	293/16	0/434	6	4	5	15
mines	0/066	363/16	0/406	5	5	4	14
Food-agriculture	0/045	208/71	0/497	4	1	6	11
Automobiles,machinery, tire	0/036	399/29	0/233	1	6	3	10
Electric-communication equipments	0/044	286/01	0/115	3	3	1	7
Metals-metal products	0/039	284/57	0/117	2	2	2	6

With total points of each industry, they were divided to three levels: high level of inconfidence, medium level, and low level of inconfidence. with the level of significance of the independent variable of accruals of the working capital that was calculated for each industry in testing the third hypothesis, we can conclude the industries in that the level of in significance is higher, the positive relationship between errors in management forecasts of subsequent year earnings and current year accruals will have a higher level of significance (level of significance 99%). this level of significance decreases going from the industries with high level of inconfidence to the industries with low level of inconfidence (level of significance 95%). that is in industries with lower level of in confidence positive relationship between errors in management forecasts of subsequent year earnings and current year accruals will have lower significance. the results of this analysis are shown in table 15.

Table 15 – division of the industries in terms of the level of inconfidence

Level of inconfidence	Industries	Accruals in working capital		Statistic F	Level of significance of the statistic F	Statistic D-W
		آمارهt	Sig			
High	Drugs, chemicals	3/312	0/002	9/916	0/000	1/862
	Mines	2/920	0/005	13/747	0/000	1/747
Intermediate	Food, agriculture	2/606	0/021	10/515	0/000	1/882
	Automobile, machinery, tire	2/340	0/023	9/244	0/000	1/872
Low	Electric and communication equipments	2/343	0/024	15/88	0/000	2/063
	Metals, metal products	2/441	0/028	5/598	0/000	2/136

Conclusion

The results of the test of the first hypothesis confirm that there is a significant positive relationship between management earnings forecast errors and accruals in firms listed in Tehran stock market. But, since this result is obtained in firms, may not be precise, dependable and be generalized for all industries. So for obtaining precise and generalizable results, this test was done in the active industries in Tehran stock exchange market. The results of the second test show that in all the industries under study there is a significant positive relationship between errors in management forecasts of subsequent year earnings and current year accruals. But this positive relationship for drugs, mineral and chemical industries is with 99% level of significance and for the industries under study like metals and metal products industries the level of significance is 95%. It is forecasted this difference in level of significance is because of the environment in which the industries under study are working in, so for confirming this point test of the fourth hypothesis was designed and implemented. the analyses done with the results of this test shows that in industries with higher level of inconfidence the positive relationship between errors in management forecasts of subsequent year earnings and current year accruals has a higher level of significance, so the less the level of inconfidence the less will be the level of significance. That is, industries with less level of inconfidence, the positive relationship between errors in management forecasts of subsequent year earnings and current year accruals will have less significance. The results obtained from the test of the third hypothesis shows that, in industries that the accruals change according to the improvement of the activities, this

relationship is positive, too.

In contrast, in firms that accruals do not change according to the improvement of activities of the firms there won't be such a relationship.

Limitations of the study

Some of the limitations in implementation of this study are as follows and should be considered in interpretation, explanation, and generalization.

1. The emphasis on having all the necessary information made the number of the sample less than we expected, because during the time of this study some of the firms had not forecasted the earnings and so were omitted from the study.
2. The results of this study show that the positive relationship between errors in management forecasts of subsequent year earnings and current year accruals depends on mistaken assessment of the managers of the perspectives of the commercial unit. Although this positive relationship maybe on the basis of other factors.
3. Management earnings forecast errors may be generalized to some other information other than accruals like accounting knowledge. Accruals in comparison with other accounting information like cash flow depends extensively on the management forecast of the future perspective of the firm, so most likely these items have bias in management earnings forecast.
4. In this study, accruals were not divided in to voluntary and involuntary. This division may lead to more precise results.
5. The results of this study is not generalizable to other kinds of voluntary disclosure, because the bias in earnings forecast can somewhat be confirmed on the basis of the past events. But bias in other forms of voluntary disclosure like negotiation or customer satisfaction is difficult.

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